

REMARKS

Summary of the Amendment

Upon entry of the above amendment, Claim 11 will have been amended. Accordingly, Claims 1-11 remain currently pending.

Summary of the Official Action

In the instant Office Action, Claims 1-11 have been rejected over the art of record. Also, Claim 11 is rejected under 35 U.S.C. § 112, second paragraph as being indefinite. In consideration of the included amendment and remarks, Applicant submits that the rejections have been overcome, and respectfully requests reconsideration of the outstanding Office Action and allowance of the present application.

Amendment is Proper for Entry

Applicant submits that the instant amendment is proper for entry in that Claim 11 has been amended only to address formal matters.

Telephone Entry with Examiner Sedighan

Applicant gratefully acknowledges the courtesy extended to their representative by Examiner Sedighan in conducting a telephone interview on February 17, 2004 and follow-up telephone conversations thereafter. In the interview, Applicant's representative pointed out to the Examiner that the WELCH reference does not teach or suggest communication between the first and second module via a standardized infrared communications scheme (see arguments *infra*). Although no agreements were made with regard to identifying allowable subject matter, Examiner Sedighan did suggest that he would consider withdrawing the rejections based upon WELCH.

The Examiner further requested the Applicant to provide a teaching which utilizes an infrared protocol scheme to communicate over a hardwire connection between two modules. Applicant submits that the Applicant is the first to disclose the

aforementioned concept to the U.S.P.T.O. The fact that the U.S.P.T.O. has not been able to provide any references which teach the concept that the Applicant claims should be a clear indicator that the Applicant's invention is novel and unobvious.

Traversal of Rejection Under 35 U.S.C. § 112, second paragraph

Claim 11 has been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the Examiner submits that there is insufficient antecedent basis for the term "said respective one of said at least one alternative hardwired electrical conductor".

Applicant has amended Claim 11 to recite, *inter alia*, one of said at least one alternative hardwired electrical conductor . . . by deleting the words – said respective – in an effort to make Claim 11 even more clear and definite. Therefore, the Applicant believes that the aforementioned amendment has overcome the indefinite rejection and that Claim 11 is now in condition for allowance.

Accordingly, Applicant requests reconsideration of the rejection of Claim 11 under 35 U.S.C. § 112, second paragraph.

Traversal of Rejection Under 35 U.S.C. § 103(a)

THE EXAMINER MISTAKENLY ASSUMES THAT SINCE ELECTRONIC DEVICES ARE ADAPTED TO COMMUNICATE TO OTHER ELECTRONIC DEVICES EXTERNALLY VIA INFRARED PROTOCOL SCHEMES (I.E. OVER ETHER), THAT IT WOULD BE OBVIOUS TO APPLY AN INFRARED PROTOCOL SCHEME TO WIRE CONNECTIONS BETWEEN INTERNAL COMPONENTS OF THE SAME ELECTRONIC DEVICES.

Welch in view of Rostoker:

Applicant respectfully traverses the rejection of Claims 1, 3-6 and 8-10 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,903,373 to Welch [hereinafter "WELCH"] in view of U.S. Patent No. 5,729,535 to Rostoker et al. [hereinafter "ROSTOKER"].

In summary, the Office Action contends that within the WELCH transceiver 14, data processor 112 is connected to remote controller 110 by a single hardwired electrical conductor path wherein processor 112 and controller 110 communicate via an infrared communications protocol scheme. Then the Office Action modifies WELCH with ROSTOKER's housing. The rejection is believed to be incorrect for numerous reasons, see *infra*.

WELCH does not appear to teach or suggest a single hardwired electrical conductor signal path between the first and second modules.

Applicant's independent Claim 1 recites, *inter alia*, a single hardwired electrical conductor signal path connecting said first and second modules to facilitate electrical bi-directional communications between said first and second media access control circuit only through said hardwired electrical conductor signal path.

Applicant's independent Claim 6 recites, *inter alia*, communicating electrically between the first and second modules *only through said single hardwired electrical conductor signal path* bi-directionally using the standardized infrared communications scheme protocol.

A review of the prior art indicates that WELCH is silent with regard to whether the link between remote controller 110 and data processor 112 is a single hardwired conductor electrical path. However, Figure 9 clearly indicates that the communication path between remote controller 110 and data processor 112 is a bus, cable or multiwire path because of the manner in which the communication path is illustrated. In particular, communication paths having more than one wire path, such as a multiwire path, are typically depicted with a larger boxed line with arrowheads. And typically, a single communication path is depicted with only one line, such as

how the paths to modules 126 ("CLK") and 124 ("P/S") are depicted in Figure 9. Thus, from Figure 9, it is clear that the path between remote controller 110 and data processor 112 is more than a single hardwired electrical conductor signal path.

Hence, WELCH does not teach or suggest, *inter alia*, a single hardwired electrical conductor signal path connecting said first and second modules to facilitate electrical bi-directional communications between said first and second media access control circuit only through said hardwired electrical conductor signal path, as currently recited in independent Claim 1.

And furthermore, WELCH does not teach or suggest, *inter alia*, communicating electrically between the first and second modules *only through said single hardwired electrical conductor signal path* bi-directionally using the standardized infrared communications scheme protocol, as currently recited in independent Claim 6.

Accordingly, based on this distinction alone, Applicant submits that no proper combination of the applied prior art can render unpatentable the combination of features recited in at least independent Claims 1 and 6. Therefore, Applicant requests reconsideration of the rejection of independent Claims 1 and 6 under 35 U.S.C. § 103(a).

Furthermore, Applicant submits that Claims 3-5 and 8-10 are allowable at least for the reason that these claims depend from allowable independent Claims 1 and 6 and because these claims recite additional features that further define the present invention. Therefore, Applicant requests the reconsideration of the rejection of Claims 3-5 and 8-10 under 35 U.S.C. § 103(a) and indicate these claims allowable over the art of record.

WELCH does not appear to teach or suggest communication between the first and second module via a standardized infrared communications scheme.

Applicant's independent Claim 1 recites, *inter alia*, a first module having a first media access logic circuit *for transmitting and receiving data substantially conforming to a standardized infrared communications scheme protocol*; a second

module having a second media access logic circuit for transmitting and receiving data substantially conforming to a standardized infrared communications scheme protocol utilized by said first module; . . .

Applicant's independent Claim 6 recites, communicating electrically between the first and second modules only through said single hardwired electrical conductor signal path bi-directionally *using the standardized infrared communications scheme protocol.*

On the other hand, WELCH does not appear to teach or suggest the communication between remote controller 110 and data processor 112 being in a standardized infrared communications scheme protocol. Instead WELCH teaches that the "heart of the" transceiver section 104 of the remote station 14 is communication processor 114. The WELCH transceiver section also includes infrared transmitter 116 and infrared receiver 118. Moreover, it appears that if a communications scheme is implemented, that it is implemented in the communication processor 114 of the transceiver section 104 which supports the functionality of infrared transmitter 116 and infrared receiver 118. Or to put it another way, it is apparent that the communication between remote controller 110 and data processor 112 is not via a standardized infrared communications scheme.

Accordingly, based on this distinction alone, Applicant submits that no proper combination of the applied prior art can render unpatentable the combination of features recited in at least independent Claims 1 and 6. Therefore, Applicant requests reconsideration of the rejection of independent Claims 1 and 6 under 35 U.S.C. § 103(a).

Furthermore, Applicant submits that Claims 3-5 and 8-10 are allowable at least for the reason that these claims depend from allowable independent Claims 1 and 6 and because these claims recite additional features that further define the present invention. Therefore, Applicant requests the reconsideration of the rejection of Claims 3-5 and 8-10 under 35 U.S.C. § 103(a).

Re: Dependent Claim 5

WELCH does not appear to teach or suggest each respective one of said multiplicity of modules including at least one dedicated transmitter element and receiver element.

The Examiner further contends that WELCH discloses that “the system (102, fig. 9) comprises a multiplicity of modules (112, 110, 114, fig.9), wherein each one of the multiplicity of modules has at least one transmitter (116, fig. 9) and a receiver element (118, fig. 9) formed thereon and each respective one of the multiplicity of modules being electrically interfaced to one another (note that modules 112, 110, and 114 are electrically connected to each other.” The Applicant respectfully disagrees with that contention.

Applicant’s dependent Claim 5 as recites, *inter alia*, wherein *each respective one of said multiplicity of modules comprises at least one dedicated transmitter element and receiver element*, each respective one of said multiplicity of modules being electrically interfaced to one another via said transmitter and receiver elements such that said modules are operative to transmit and receive data therebetween.

A review of WELCH indicates that WELCH does not teach or suggest a dedicated transmitter and receiver for each module that communicates to other modules via a standardized infrared communications scheme. From Figure 9, it appears that WELCH only teaches one transmitter (“IR TX”) 116 and one receiver (“IR RX”) 118 which is only dedicated to communication processor 114. It is also evident that data processor 112, remote controller 110, and communication processor 114 do not have incorporated within each individual module a transmitter and receiver which communicate through a single hardwired connection via a standardized infrared communications scheme.

Accordingly, Applicant submits that no proper combination of the applied prior art can render unpatentable the combination of features recited in at least dependent Claim 5. Therefore, Applicant requests reconsideration of the rejection of dependent Claim 5 under 35 U.S.C. § 103(a).

Welch in view of Rostoker and in further view of Matsubara

Applicant respectfully traverses the rejection of Claims 2 and 7 under 35 U.S.C. § 103(a) as being unpatentable over WELCH in view of ROSTOKER and in further view of U.S. Patent No. 6,335,812 to Matsubara et al. [hereinafter "MATSUBARA"].

The Examiner acknowledges that the modified communication system of WELCH and ROSTOKER differ from the claimed invention in that WELCH and ROSTOKER do not disclose a standardized infrared communications scheme protocol developed by the Infrared Data Association. The Examiner further suggests that MATSUBARA discloses a plurality of optical communications modules (110, 111, fig. 2) that communicate based on infrared scheme protocol developed by the Infrared Data Association. The Examiner then submits that it would have been obvious to a person of ordinary skill in the art at the time the invention to incorporate an optical transmitter and an optical receiver that uses a standard protocol defined by IrDA such as one of MATSUBARA for the optical transmitter and receiver in the modified communication system of WELCH and ROSTOKER in order to provide a point-to-point transmission that support a broad range of application, computations, and communications.

As previously discussed, *supra*, the combination of cited references does not result in the invention as presently recited in Claim 2 or Claim 7. The Applicant's invention has a dedicated transceiver for each hardware module *for transmitting data substantially conforming to a standardized infrared communications scheme protocol* (44, 50 for the embodiment of Figure 3 or 64, 68, 74, and 78 for the embodiment of Figure 4). The Applicant's invention further has a dedicated receiver for each module *for receiving data substantially conforming to a standardized infrared communications scheme protocol* (46, 48 for the embodiment of Figure 3 or 66, 70, 72, 76). Instead, the Office Action appears to incorrectly conclude that the WELCH data processor 112 and the WELCH remote controller 110 each have dedicated transceivers and receivers that communicate via a standardized infrared communications scheme.

Because neither WELCH, ROSTOKER, or MATSUBARA appear to disclose or suggest as recited in independent Claim 1, *inter alia*, a first module having a first media access logic circuit for *transmitting and receiving data substantially conforming to a standardized infrared communications scheme protocol*; a second module having a second media access logic circuit *for transmitting and receiving data substantially conforming to a standardized infrared communications scheme protocol utilized by said first module*; . . . Applicant submits that a proper combination of these documents does not render unpatentable the combination of features recited in at least independent Claim 1.

Moreover, because neither WELCH, ROSTOKER, or MATSUBARA appear to disclose or suggest as recited in independent Claim 6, *inter alia*, providing a first module . . . for transmitting and receiving data substantially conforming to a standardized infrared communications scheme protocol; providing a second module . . . for transmitting and receiving data substantially conforming to a standardized infrared communications scheme protocol; . . . Applicant submits that a proper combination of these documents does not render unpatentable the combination of features recited in at least independent Claim 6.

Furthermore, Applicant submits that Claims 2 and 7 are allowable at least for the reason that these claims depend from allowable independent Claims 1 and 6 and because Claim 2 and 7 recite additional features that further define the present invention. In particular, Applicant submits that no proper combination of WELCH, ROSTOKER and MATSUBARA discloses or suggests in combination with the features of Claims 2 and 7, *inter alia*, wherein said infrared communications scheme protocol comprises a protocol developed by the Infrared Data Association.

Therefore Applicant requests reconsideration of the rejection of Claims 2 and 7 over WELCH, ROSTOKER and MATSUBARA under 35 U.S.C. § 103(a).

Myers in view of Rostoker:

Applicant traverses the rejection of Claims 1 and 5 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,959,287 to Myers et al. [hereinafter

“MYERS”] in view of U.S. Patent No. 5,729,535 to Rostoker et al. [hereinafter “ROSTOKER”].

In summary, the Office Action states that within the MYERS wireless terminal 12, CPU 278 is connected to optical interface 274 by a single hardwired electrical conductor path wherein CPU 278 and optical interface 278 communicate via an infrared communications protocol scheme. Then the Office Action modifies MYERS with ROSTOKER’s housing. The rejection is inappropriate for numerous reasons, see *infra*.

MYERS does appear to not teach or suggest communication between the first and second module via a standardized infrared communications scheme.

Applicant’s independent Claim 1 as recites, *inter alia*, a first module having a first media access logic circuit *for transmitting and receiving data substantially conforming to a standardized infrared communications scheme protocol*; a second module having a second media access logic *circuit for transmitting and receiving data substantially conforming to a standardized infrared communications scheme protocol utilized by said first module*; . . .

On the other hand, MYERS does not appear to teach or suggest **the communication between CPU 278 and optical interface 274 being in a standardized infrared communications scheme protocol**. MYERS is silent in regard to the exact manner in which the CPU 278 and optical interface 274 communicates. The Office Action suggests that digital electronic devices, such as the wireless terminal 12, communicate internally using infrared protocol schemes. However, this does not appear to be the case. Rather, one of ordinary skill in the art would easily recognize that traditional forms of digital communication and/or digital signal processing are typically implemented within electronic devices between various modules. Furthermore, as stated previously, it is evident that the present disclosure is the only reference which does teach utilizing an infrared protocol scheme to communicate between two modules over a hardwire.

Accordingly, Applicant submits that no proper combination of the applied prior art can render unpatentable the combination of features recited in at least independent Claim 1. Therefore, Applicant requests reconsideration of the rejection of independent Claims 1 and 6 under 35 U.S.C. § 103(a).

Moreover, Applicant submits that Claim 5 is allowable at least for the reason that this claim depends from allowable independent Claim 1 and because this claim recites additional features that further define the present invention. Therefore, Applicant requests reconsideration of the rejection of Claim 5 under 35 U.S.C. § 103(a).

In re "shock-resistant": Welch or Myers in view of Rostoker

With regard to Claim 1, the claim's preamble recites, *inter alia*, [a] *shock-resistant* system for operatively interconnecting hardware modules within a computer system . . . From the aforementioned rejection, it is apparent that the Examiner has a misunderstanding as to the implied definition of "shock".

The Examiner's interpretation of "shock-resistant" is inappropriate.

In general, the Applicant's invention is directed to systems and methods for interconnecting a plurality of hardware modules, namely circuit boards or daughter cards, in an embedded environment that have increased reliability, such that they can withstand shock and vibration, and provide greater electrical isolation between such modules than prior art methods and systems. The term "shock-resistant" is not intended to mean the phenomena of an extreme stimulation of the nerves, muscles, etc. one receives when an electric current is passed through the body. Rather, the term "shock-resistant" is intended to be interpreted generally as the impact, forces, extreme movement, etc. (for instance in combat or during a collision); a sudden powerful concussion (for instance from a large bomb); or a violent blow, shake or jar.

With this clarification in mind, it is clear that the Examiner has modified WELCH and MYERS in view of ROSTOKER for an entirely unnecessary reason.

Needless to say, there is absolutely no proper motivation provided by the Examiner for the aforementioned modification. Thus, Applicant submits that the art of record fails to disclose or suggest the requisite motivation or rationale for combining the documents under 35 U.S.C. § 103(a) in the manner asserted by the Examiner.

Accordingly, based on the aforementioned defect in the rejection, Applicant requests reconsideration of the rejection of independent Claims 1 under 35 U.S.C. § 103(a).

Furthermore, Applicant submits that Claims 2-5 are allowable at least for the reason that these claims depend from allowable independent Claim 1 and because these claims recite additional features that further define the present invention. Therefore, Applicant requests reconsideration of the rejection of Claims 2-5 under 35 U.S.C. § 103(a).

CONCLUSION

Applicant respectfully submits that each and every pending claim of the present invention meets the requirements for patentability, and respectfully request the Examiner to indicate allowance of each and every claim of the present invention.

In view of the foregoing, it is submitted that none of the references of record, either taken alone or in any proper combination thereof, anticipate or render obvious the Applicant's invention, as recited in Claims 1-11. The applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

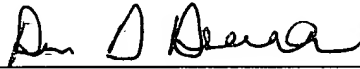
Accordingly, reconsideration of the outstanding Office Action and allowance of the present application and all the claims therein are respectfully requested and now believed to be appropriate.

If any additional fee is required, please charge Deposit Account Number 19-4330.

Respectfully submitted,

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